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From Fourier's theorem the author finally deduces a theorem for the discontinuous expression of $\frac{f(x)}{t^n}$, viz. :

$$\frac{f(x)}{t^n} = \frac{1}{\pi \Gamma(n)} \int_{-\infty}^{\infty} \int_0^{\infty} \int_0^{\infty} da dv dw \cos\left((a-x)v - tw + \frac{n\pi}{2}\right) w^{n-1} f(a), \quad (4)$$

in which the symbols \int_0^{∞} are both used in a limiting sense.

This theorem, it is observed, is susceptible of important applications, in the theory of definite multiple integrals.

As respects the expression of discontinuity, the formulæ (1), (2), (3), are shewn to be equivalent. The advantage which the second possesses over the first is, that x enters into the second member in a rational form; and the advantage of the third, or Fourier's theorem, over them both, is, that x enters into the second member exponentially, which affords facilities for both the direct and the inverse processes of the differential calculus.

In the fourth theorem the author remarks that both x and t enter exponentially.

Sir William R. Hamilton made some observations on Mr. Boole's communication.

Professor Harrison made some remarks on the peculiarities of the anatomy of the Emu. [This paper, not having been received in proper time for insertion here, will be printed in the Appendix, No. VII.]

Professor Allman announced the addition of *Deotis Maritima* to the Irish Fauna. This plant he had observed during the latter part of the summer of 1845, in the sand-hills in the neighbourhood of Dungarvan, county of Wexford.

DONATIONS.

Memorie della Reale Accademia della Scienza di Torino. Serie Secunda. Tome. VI. Presented by the Academy.